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Short Communication

Taxonomic clarification and lectotype designation for *Cryphalus striatulus* Mannerheim, 1853 (non Browne, 1978, nec Browne, 1981) (Coleoptera, Curculionidae, Scolytinae), and notes on pervasive homonymy

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The bark beetle *Cryphalus striatulus* Mannerheim, 1853 was described on the basis of two specimens from Alaska, one under the bark of unknown tree and one caught in flight (Mannerheim 1853). Schwarz (1895) listed *C. striatulus* as feeding on the spruce tree *Picea englemanni* Engelm. [sic!] (Pinaceae) based on specimens collected while on vacation near Alta, Cottonwood Canyon, Utah, in June 1891. These specimens share the approximate collection data (with year and host omitted) as the specimen which became the type of *Cryphalus ruficollis* Hopkins, 1915. It is unclear why Hopkins treated them as such, but all subsequent publications before 2021 refer to Mannerheim's species as *Procryphalus* Hopkins,1915 then as *Trypophloeus* Fairmaire, 1864. Schwarz also collected specimens of *Trypophloeus* from the same locality, eventually becoming the holotype of *Trypophloeus punctipennis* Hopkins, 1915, now a synonym of *Trypophloeus nitidus* Swaine, 1912.

Later reviews of North American Cryphalini (sensu Wood, 1954) found that there was a proliferation of described names, many of which represent synonymous taxa (Wood 1954). For *Cryphalus striatulus* Mannerheim, 1853, the identity was uncertain because the types could not be found in Mannerheim's collection. Despite this, Wood proposed that *Trypophloeus nitidus* Swaine, 1912 was junior synonym of *Cryphalus striatulus*, thus providing the *Trypopholeus striatulus* [sic!] combination (Wood 1969, 1973). This change was probably based on two major features: (1) Mannerheim's statement that the specimen was similar to *Trypophloeus granulatus* (Ratzeburg, 1837) (Mannerheim 1853), and (2) *Trypophloeus nitidus* was the only North American Cryphalini described as being north of British Columbia in literature at that time (Wood 1969, 1973). This taxonomic combination remained unchanged until Kvamme et al. (2021) in which the authors, while looking for *Trypophloeus* types, discovered a single specimen of *Cryphalus striatulus* Mannerheim, 1853 in the type material pres-

ent in the Zoological Institute (St. Petersburg, Russia) (Fig. 1A). Kvamme et al. found that the species described by Mannerheim was a species of *Cryphalus* Erichson, 1836 and re-established the original combination (Kvamme et al. 2021), putting *Cryphalus ruficollis* Hopkins, 1915 as a junior synonym.

Mannerheim (1853) explicitly described two 'forms' in the description, with differences that are neither diagnostic of *Cryphalus* nor *Trypophloeus*. However, given the multiple specimens with different morphologies in the original description, there remains an unlikely but possible chance that the source of historical confusion was that two species were present in the type series. To maintain taxonomic stability, we designate the only known co-type as the lectotype of *Cryphalus striatulus*. This specimen bears the labels: (1) golden circle used to mark type specimens; (2) "*Cryphalus striatulus* Mnrhm. Kenai J[unio]. [?] Russam [?Russian America]" (unclear); and (3) "Lectotype

Figure 1. Habitus and original labels of primary types of species sharing the combination "*Cryphalus striatulus*". Specimen photographs are resized to a common scale, black bars represent 1.0 mm **A** *Cryphalus striatulus* Mannerheim, 1853; designated lectotype, Zoological Institute (St. Petersburg, Russia) **B** *Cryphalus brownei* (Beaver, 1991) (= *Cryphalomorphus striatulus* Browne, 1978) holotype, NHMUK 010805928 **C** *Cryphalus punctistriatulus* Johnson, 2020 (= *Cryphalus striatulus* Browne, 1981) holotype, NHMUK 010805993.

Cryphalus striatulus Mnrhm. Marchioro et al. des. 2023". This designation promotes stability in case the second specimen is found and represents a different species.

Additionally, the taxonomic change following the discovery of the type creates a new homonym. *Cryphalus striatulus* (Browne, 1978) was originally described as *Cryphalomorphus striatulus* Browne, 1978 on the basis of a single specimen from Penang, Malaysia (Fig. 1B), collected in the gut of a swiftlet (Beaver and Browne 1978). Subsequently, the species was moved to *Hypothenemus* Westwood, 1834 and given the replacement name *Hypothenemus brownei* Beaver, 1991 since this taxonomic combination was already pre-occupied by *Hypothenemus striatulus* Schedl, 1942 (Schedl 1942; Beaver 1991). In 2020, Johnson et al. removed the species from *Hypothenemus* and placed it in *Cryphalus*, rendering the replacement name no longer necessary, using *Cryphalus striatulus* (Browne, 1978) as the valid combination (Johnson et al. 2020). Since the combination *Cryphalus striatulus* is now occupied by *Cryphalus striatulus* Mannerheim, 1853 (sensu Kvamme et al. 2021), we treat the name *Cryphalus striatulus* (Browne, 1978) as a junior homonym, and the novel combination, *Cryphalus brownei* (Beaver, 1991), as the valid name. This is an unusual nomenclatural situation, for using a replacement name as a valid name when in a different genus.

An additional potential source of confusion is *Cryphalus striatulus* Browne, 1981 (Fig. 1C), which was already replaced with *Cryphalus punctistriatulus* Johnson, 2020 due to homonymy with *Cryphalus striatulus* (Browne, 1978) (Johnson et al. 2020). Furthermore, *Cryphalus brownei* Wood, 1992, already exists as an unnecessary replacement name for *Cryphalus artocarpus* Schedl, 1958, (now a synonym of *Cryphalus artocarpus* (Schedl, 1939)) (Johnson et al. 2020). Given such a high degree of homonymy within *Cryphalus*, we suggest correctly citing the authority with the year to avoid future confusion.

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Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

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Data availability

All of the data that support the findings of this study are available in the main text.

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